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NEWS	2	AUG 06	CAS REGISTRY enhanced with new experimental property tags
NEWS	3	AUG 06	FSTA enhanced with new thesaurus edition
NEWS	4	AUG 13	CA/Capplus enhanced with additional kind codes for granted patents
NEWS	5	AUG 20	CA/Capplus enhanced with CAS indexing in pre-1907 records
NEWS	6	AUG 27	Full-text patent databases enhanced with predefined patent family display formats from INPADOCDB
NEWS	7	AUG 27	USPATOLD now available on STN
NEWS	8	AUG 28	CAS REGISTRY enhanced with additional experimental spectral property data
NEWS	9	SEP 07	STN AnaVist, Version 2.0, now available with Derwent World Patents Index
NEWS	10	SEP 13	FORIS renamed to SOFIS
NEWS	11	SEP 13	INPADOCDB enhanced with monthly SDI frequency
NEWS	12	SEP 17	CA/Capplus enhanced with printed CA page images from 1967-1998
NEWS	13	SEP 17	Capplus coverage extended to include traditional medicine patents
NEWS	14	SEP 24	EMBASE, EMBAL, and LEMBASE reloaded with enhancements
NEWS	15	OCT 02	CA/Capplus enhanced with pre-1907 records from Chemisches Zentralblatt
NEWS	16	OCT 19	BEILSTEIN updated with new compounds
NEWS	17	NOV 15	Derwent Indian patent publication number format enhanced
NEWS	18	NOV 19	WPIX enhanced with XML display format
NEWS	19	NOV 30	ICSD reloaded with enhancements
NEWS	20	DEC 04	LINPADOCDB now available on STN
NEWS	21	DEC 14	BEILSTEIN pricing structure to change
NEWS	22	DEC 17	USPATOLD added to additional database clusters
NEWS	23	DEC 17	IMSDRUGCONF removed from database clusters and STN
NEWS	24	DEC 17	DGENE now includes more than 10 million sequences
NEWS	25	DEC 17	TOXCENTER enhanced with 2008 MeSH vocabulary in MEDLINE segment
NEWS	26	DEC 17	MEDLINE and LMEDLINE updated with 2008 MeSH vocabulary
NEWS	27	DEC 17	CA/Capplus enhanced with new custom IPC display formats
NEWS	28	DEC 17	STN Viewer enhanced with full-text patent content from USPATOLD
NEWS	29	JAN 02	STN pricing information for 2008 now available
NEWS EXPRESS	19	SEPTEMBER 2007:	CURRENT WINDOWS VERSION IS V8.2, CURRENT MACINTOSH VERSION IS V6.0c(ENG) AND V6.0Jc(JP), AND CURRENT DISCOVER FILE IS DATED 19 SEPTEMBER 2007.
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FILE 'HOME' ENTERED AT 10:19:49 ON 07 JAN 2008

=> file medline, biosis
COST IN U.S. DOLLARS

SINCE FILE	TOTAL
ENTRY	SESSION
0.84	0.84

FULL ESTIMATED COST

FILE 'MEDLINE' ENTERED AT 10:21:53 ON 07 JAN 2008

FILE 'BIOSIS' ENTERED AT 10:21:53 ON 07 JAN 2008
Copyright (c) 2008 The Thomson Corporation

=> s (quorum sensing) and (inter species)
L1 17 (QUORUM SENSING) AND (INTER SPECIES)

=> s l1 and (inducer)
L2 2 L1 AND (INDUCER)

=> s l1 and (AI-2)
L3 9 L1 AND (AI-2)

=> s l2 ti abs ibib tot
MISSING OPERATOR L2 TI

The search profile that was entered contains terms or nested terms that are not separated by a logical operator.

=> d his

(FILE 'HOME' ENTERED AT 10:19:49 ON 07 JAN 2008)

FILE 'MEDLINE, BIOSIS' ENTERED AT 10:21:53 ON 07 JAN 2008

L1 17 S (QUORUM SENSING) AND (INTER SPECIES)
L2 2 S L1 AND (INDUCER)
L3 9 S L1 AND (AI-2)

=> d l2 ti abs ibib tot

L2 ANSWER 1 OF 2 MEDLINE on STN

TI Evidence for quorum sensing in Clostridium botulinum 56A.

AB AIMS: Experiments were designed to detect quorum-sensing signals produced by Clostridium botulinum. METHODS AND RESULTS: Clostridium botulinum 56A cell-free supernatants obtained at the end of lag phase, the mid-exponential phase and early stationary phase of growth were assayed for bioluminescence in the Vibrio harveyi quorum-sensing assay system. Twelve and 16-h culture supernatants induced bioluminescence in the auto-inducer 2 (AI-2) but not the auto-inducer 1 (AI-1) assay. Intra-species quorum sensing was also assayed as the ability of the supernatants to promote spore germination and outgrowth in a microtitre plate system. Spore populations exposed to C. botulinum supernatant from the end of lag phase became positive for growth sooner than controls. CONCLUSIONS: The influence of cell-free supernatant on ungerminated spores and detection of bioluminescence in the AI-2 assay are evidence for a signalling

molecule(s) and provide a first step in characterizing *C. botulinum* quorum sensing. SIGNIFICANCE AND IMPACT OF THE STUDY: This study suggests that spores do not behave independently of each other and may explain the inocula size effects observed in challenge studies. Whether AI-2 production in *C. botulinum* serves as an inter-species signal or as a detoxification mechanism remains to be determined.

ACCESSION NUMBER: 2006027455 MEDLINE
DOCUMENT NUMBER: PubMed ID: 16411920
TITLE: Evidence for quorum sensing in
Clostridium botulinum 56A.
AUTHOR: Zhao L; Montville T J; Schaffner D W
CORPORATE SOURCE: Department of Food Science, Cook College, The New Jersey
Agricultural Experiment Station, Rutgers, The State
University of New Jersey, New Brunswick, NJ 08901-8520,
USA.
SOURCE: Letters in applied microbiology, (2006 Jan) Vol. 42, No. 1,
pp. 54-8.
Journal code: 8510094. ISSN: 0266-8254.
PUB. COUNTRY: England: United Kingdom
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
(RESEARCH SUPPORT, U.S. GOV'T, NON-P.H.S.)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200608
ENTRY DATE: Entered STN: 18 Jan 2006
Last Updated on STN: 1 Sep 2006
Entered Medline: 31 Aug 2006

L2 ANSWER 2 OF 2 BIOSIS COPYRIGHT (c) 2008 The Thomson Corporation on STN
TI Evidence for quorum sensing in Clostridium botulinum
56A.

AB Aims: Experiments were designed to detect quorum-sensing
signals produced by Clostridium botulinum. Methods and Results: Clostridium
botulinum 56A cell-free supernatants obtained at the end of lag phase, the
mid-exponential phase and early stationary phase of growth were assayed
for bioluminescence in the Vibrio harveyi quorum-sensing
assay system. Twelve and 16-h culture supernatants induced
bioluminescence in the auto-inducer 2 (AI-2) but not the auto-
inducer 1 (AI-1) assay. Intra-species quorum
sensing was also assayed as the ability of the supernatants to
promote spore germination and outgrowth in a microtitre plate system.
Spore populations exposed to *C. botulinum* supernatant from the end of lag
phase became positive for growth sooner than controls. Conclusions: The
influence of cell-free supernatant on ungerminated spores and detection of
bioluminescence in the AI-2 assay are evidence for a signalling
molecule(s) and provide a first step in characterizing *C. botulinum*
quorum sensing. Significance and Impact of the Study:
This study suggests that spores do not behave independently of each other
and may explain the inocula size effects observed in challenge studies.
Whether AI-2 production in *C. botulinum* serves as an inter-
species signal or as a detoxification mechanism remains to be
determined.

ACCESSION NUMBER: 2006:192980 BIOSIS
DOCUMENT NUMBER: PREV200600190507
TITLE: Evidence for quorum sensing in
Clostridium botulinum 56A.
AUTHOR(S): Zhao, L.; Montville, T. J. [Reprint Author]; Schaffner, D.
W.
CORPORATE SOURCE: Rutgers State Univ, New Jersey Agr Expt Stn, Cook Coll,
Dept Food Sci, 65 Dudley Rd, New Brunswick, NJ 08901 USA
montville@aesop.rutgers.edu
SOURCE: Letters in Applied Microbiology, (JAN 2006) Vol. 42, No. 1,
pp. 54-58.

CODEN: LAMIE7. ISSN: 0266-8254.
DOCUMENT TYPE: Article
LANGUAGE: English
ENTRY DATE: Entered STN: 15 Mar 2006
Last Updated on STN: 15 Mar 2006

=> d his

(FILE 'HOME' ENTERED AT 10:19:49 ON 07 JAN 2008)

FILE 'MEDLINE, BIOSIS' ENTERED AT 10:21:53 ON 07 JAN 2008

L1 17 S (QUORUM SENSING) AND (INTER SPECIES)
L2 2 S L1 AND (INDUCER)
L3 9 S L1 AND (AI-2)

=> d l3 ti abs ibib tot

L3 ANSWER 1 OF 9 MEDLINE on STN
TI Evidence for quorum sensing in Clostridium botulinum
56A.
AB AIMS: Experiments were designed to detect quorum-sensing
signals produced by Clostridium botulinum. METHODS AND RESULTS:
Clostridium botulinum 56A cell-free supernatants obtained at the end of
lag phase, the mid-exponential phase and early stationary phase of growth
were assayed for bioluminescence in the Vibrio harveyi quorum-
sensing assay system. Twelve and 16-h culture supernatants
induced bioluminescence in the auto-inducer 2 (AI-2)
but not the auto-inducer 1 (AI-1) assay. Intra-species quorum
sensing was also assayed as the ability of the supernatants to
promote spore germination and outgrowth in a microtitre plate system.
Spore populations exposed to C. botulinum supernatant from the end of lag
phase became positive for growth sooner than controls. CONCLUSIONS: The
influence of cell-free supernatant on ungerminated spores and detection of
bioluminescence in the AI-2 assay are evidence for a
signalling molecule(s) and provide a first step in characterizing C.
botulinum quorum sensing. SIGNIFICANCE AND IMPACT OF
THE STUDY: This study suggests that spores do not behave independently of
each other and may explain the inocula size effects observed in challenge
studies. Whether AI-2 production in C. botulinum
serves as an inter-species signal or as a
detoxification mechanism remains to be determined.

ACCESSION NUMBER: 2006027455 MEDLINE
DOCUMENT NUMBER: PubMed ID: 16411920
TITLE: Evidence for quorum sensing in
Clostridium botulinum 56A.
AUTHOR: Zhao L; Montville T J; Schaffner D W
CORPORATE SOURCE: Department of Food Science, Cook College, The New Jersey
Agricultural Experiment Station, Rutgers, The State
University of New Jersey, New Brunswick, NJ 08901-8520,
USA.
SOURCE: Letters in applied microbiology, (2006 Jan) Vol. 42, No. 1,
pp. 54-8.
Journal code: 8510094. ISSN: 0266-8254.
PUB. COUNTRY: England: United Kingdom
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
(RESEARCH SUPPORT, U.S. GOV'T, NON-P.H.S.)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200608
ENTRY DATE: Entered STN: 18 Jan 2006
Last Updated on STN: 1 Sep 2006
Entered Medline: 31 Aug 2006

L3 ANSWER 2 OF 9 MEDLINE on STN

TI Autoinducer 2 activity in Escherichia coli culture supernatants can be actively reduced despite maintenance of an active synthase, LuxS.

AB Production of the signalling molecule (autoinducer-2) synthesized by LuxS has been proposed to be pivotal to a universal mechanism of inter-species bacterial cell-cell communication (quorum sensing); however recently the function of LuxS has been noted to be integral to central metabolism since it contributes to the activated methyl cycle. This paper shows that when Helicobacter pylori LuxS is overproduced in Escherichia coli, it forms cross-linkable multimers. These multimers persist at comparable levels after 24 h of growth if glucose is omitted from the growth medium; however, the levels of extracellular autoinducer-2 decline (Glucose Retention of AI-2 Levels: GRAIL). Glycerol, maltose, galactose, ribose and L-arabinose could substitute for glucose, but lactose, D-arabinose, acetate, citrate and pyruvate could not. Mutations in (i). metabolic pathways (glycolytic enzymes eno, pgk, pgm; galactose epimerase; the Pta-AckA pathway), (ii). sugar transport (pts components, rbs operon, mgl, trg), and (iii). regulators involved in conventional catabolic repression (crp, cya), cAMP-independent catabolite repression (creC, fruR, rpoS,) the stringent response (relA, spoT) and the global carbon storage regulator (csrA) did not prevent GRAIL. Although the basis of GRAIL remains uncertain, it is clear that the mechanism is distinct from conventional catabolite repression. Moreover, GRAIL is not due to inactivation of the enzymic activity of LuxS, since in E. coli, LuxS contained within stationary-phase cells grown in the absence of glucose maintains its activity in vitro.

ACCESSION NUMBER: 2003120713 MEDLINE

DOCUMENT NUMBER: PubMed ID: 12634340

TITLE: Autoinducer 2 activity in Escherichia coli culture supernatants can be actively reduced despite maintenance of an active synthase, LuxS.

AUTHOR: Hardie Kim R; Cooksley Clare; Green Andrew D; Winzer Klaus

CORPORATE SOURCE: Institute of Infections and Immunity, Queen's Medical Centre, C-Floor, West Block, Nottingham NG7 2UH, UK.. kim.hardie@nottingham.ac.uk

SOURCE: Microbiology (Reading, England), (2003 Mar) Vol. 149, No. Pt 3, pp. 715-28.

Journal code: 9430468. ISSN: 1350-0872.

PUB. COUNTRY: England: United Kingdom

DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE) (RESEARCH SUPPORT, NON-U.S. GOV'T)

LANGUAGE: English

FILE SEGMENT: Priority Journals

ENTRY MONTH: 200306

ENTRY DATE: Entered STN: 14 Mar 2003

Last Updated on STN: 11 Jun 2003

Entered Medline: 10 Jun 2003

L3 ANSWER 3 OF 9 MEDLINE on STN

TI Structural identification of a bacterial quorum-sensing signal containing boron.

AB Cell-cell communication in bacteria is accomplished through the exchange of extracellular signalling molecules called autoinducers. This process, termed quorum sensing, allows bacterial populations to coordinate gene expression. Community cooperation probably enhances the effectiveness of processes such as bioluminescence, virulence factor expression, antibiotic production and biofilm development. Unlike other autoinducers, which are specific to a particular species of bacteria, a recently discovered autoinducer (AI-2) is produced by a large number of bacterial species. AI-2 has been proposed to serve as a 'universal' signal for inter-species communication. The chemical identity of AI-2 has, however, proved elusive. Here we present the crystal

structure of an AI-2 sensor protein, LuxP, in a complex with autoinducer. The bound ligand is a furanosyl borate diester that bears no resemblance to previously characterized autoinducers. Our findings suggest that addition of naturally occurring borate to an AI-2 precursor generates active AI-2

. Furthermore, they indicate a potential biological role for boron, an element required by a number of organisms but for unknown reasons.

ACCESSION NUMBER: 2002099466 MEDLINE
DOCUMENT NUMBER: PubMed ID: 11823863
TITLE: Structural identification of a bacterial quorum-sensing signal containing boron.
AUTHOR: Chen Xin; Schauder Stephan; Potier Noelle; Van Dorsselaer Alain; Pelczer Istvan; Bassler Bonnie L; Hughson Frederick M
CORPORATE SOURCE: Department of Molecular Biology, Princeton University, Princeton, New Jersey 08544-1014, USA.
SOURCE: Nature, (2002 Jan 31) Vol. 415, No. 6871, pp. 545-9. Journal code: 0410462. ISSN: 0028-0836.
PUB. COUNTRY: England; United Kingdom
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
(RESEARCH SUPPORT, NON-U.S. GOV'T)
(RESEARCH SUPPORT, U.S. GOV'T, NON-P.H.S.)
(RESEARCH SUPPORT, U.S. GOV'T, P.H.S.)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200203
ENTRY DATE: Entered STN: 7 Feb 2002
Last Updated on STN: 13 Mar 2002
Entered Medline: 12 Mar 2002

L3 ANSWER 4 OF 9 BIOSIS COPYRIGHT (c) 2008 The Thomson Corporation on STN
TI Evidence for quorum sensing in Clostridium botulinum
56A.

AB Aims: Experiments were designed to detect quorum-sensing signals produced by Clostridium botulinum. Methods and Results: Clostridium botulinum 56A cell-free supernatants obtained at the end of lag phase, the mid-exponential phase and early stationary phase of growth were assayed for bioluminescence in the Vibrio harveyi quorum-sensing assay system. Twelve and 16-h culture supernatants induced bioluminescence in the auto-inducer 2 (AI-2) but not the auto-inducer 1 (AI-1) assay. Intra-species quorum sensing was also assayed as the ability of the supernatants to promote spore germination and outgrowth in a microtitre plate system. Spore populations exposed to C. botulinum supernatant from the end of lag phase became positive for growth sooner than controls. Conclusions: The influence of cell-free supernatant on ungerminated spores and detection of bioluminescence in the AI-2 assay are evidence for a signalling molecule(s) and provide a first step in characterizing C. botulinum quorum sensing. Significance and Impact of the Study: This study suggests that spores do not behave independently of each other and may explain the inocula size effects observed in challenge studies. Whether AI-2 production in C. botulinum serves as an inter-species signal or as a detoxification mechanism remains to be determined.

ACCESSION NUMBER: 2006:192980 BIOSIS
DOCUMENT NUMBER: PREV200600190507
TITLE: Evidence for quorum sensing in Clostridium botulinum 56A.
AUTHOR(S): Zhao, L.; Montville, T. J. [Reprint Author]; Schaffner, D. W.
CORPORATE SOURCE: Rutgers State Univ, New Jersey Agr Expt Stn, Cook Coll, Dept Food Sci, 65 Dudley Rd, New Brunswick, NJ 08901 USA
montville@aesop.rutgers.edu
SOURCE: Letters in Applied Microbiology, (JAN 2006) Vol. 42, No. 1,

pp. 54-58.

CODEN: LAMIE7. ISSN: 0266-8254.

DOCUMENT TYPE:

Article

LANGUAGE:

English

ENTRY DATE:

Entered STN: 15 Mar 2006

Last Updated on STN: 15 Mar 2006

L3 ANSWER 5 OF 9 BIOSIS COPYRIGHT (c) 2008 The Thomson Corporation on STN

TI Modulation of *Pseudomonas aeruginosa* gene expression by host microflora through interspecies communication.

AB The change in gene expression patterns in response to host environments is a prerequisite for bacterial infection. Bacterial diseases often occur as an outcome of the complex interactions between pathogens and the host. The indigenous, usually non-pathogenic microflora is a ubiquitous constituent of the host. In order to understand the interactions between pathogens and the resident microflora and how they affect the gene expression patterns of the pathogens and contribute to bacterial diseases, the interactions between pathogenic *Pseudomonas aeruginosa* and avirulent oropharyngeal flora (OF) strains isolated from sputum samples of cystic fibrosis (CF) patients were investigated. Animal experiments using a rat lung infection model indicate that the presence of OF bacteria enhanced lung damage caused by *P. aeruginosa*. Genome-wide transcriptional analysis with a lux reporter-based promoter library demonstrated that approximately 4% of genes in the genome responded to the presence of OF strains using an in vitro system. Characterization of a subset of the regulated genes indicates that they fall into seven functional classes, and large portions of the upregulated genes are genes important for *P. aeruginosa* pathogenesis. Autoinducer-2 (AI-2)-mediated quorum sensing, a proposed inter-species signalling system, accounted for some, but not all, of the gene regulation. A substantial amount of AI-2 was detected directly in sputum samples from CF patients and in cultures of most non-pseudomonad bacteria isolated from the sputa. Transcriptional profiling of a set of defined *P. aeruginosa* virulence factor promoters revealed that OF and exogenous AI-2 could upregulate overlapping subsets of these genes. These results suggest important contributions of the host microflora to *P. aeruginosa* infection by modulating gene expression via interspecies communications.

ACCESSION NUMBER: 2004:39144 BIOSIS

DOCUMENT NUMBER: PREV200400031312

TITLE: Modulation of *Pseudomonas aeruginosa* gene expression by host microflora through interspecies communication.

AUTHOR(S): Duan, Kangmin; Dammel, Carol; Stein, Jeffrey; Rabin, Harvey; Surette, Michael G. [Reprint Author]

CORPORATE SOURCE: Department of Microbiology and Infectious Diseases, University of Calgary, Calgary, AB, T2N 4N1, Canada
surette@ucalgary.ca

SOURCE: Molecular Microbiology, (December 2003) Vol. 50, No. 5, pp. 1477-1491. print.

ISSN: 0950-382X (ISSN print).

DOCUMENT TYPE:

Article

LANGUAGE:

English

ENTRY DATE:

Entered STN: 7 Jan 2004

Last Updated on STN: 7 Jan 2004

L3 ANSWER 6 OF 9 BIOSIS COPYRIGHT (c) 2008 The Thomson Corporation on STN

TI AI-2 mediated signaling in the microbial community in the lungs of cystic fibrosis patients.

AB Background: Chronic bacterial infection, predominantly by the opportunistic pathogen *Pseudomonas aeruginosa* causes the majority of morbidity and mortality in patients with cystic fibrosis (CF). In addition to *P. aeruginosa*, a variety of other microorganisms are often found in CF lungs. In this microbial community, quorum-sensing systems, which are important for bacterial gene regulation

and biofilm development, play important roles. AI-2 mediated quorum sensing has been suggested to be an inter-species signaling system and has been linked to bacterial virulence in a number of diverse bacteria. We examined the presence of AI-2 in the lungs of CF patients, and investigated the roles of AI-2 in the complex microbial community in the CF lungs. Methods: The *Vibrio harveyi* reporter system was used to detect AI-2 in sputum samples from CF patients and to measure the production of AI-2 by the non-pseudomonad bacterial isolates. A rat lung chronic infection model was used to examine the effect of AI-2 on *P. aeruginosa* pathogenesis. Effect of AI-2 on *P. aeruginosa* virulence factor was tested using lux-based expression profiling. Results: AI-2 was found in most of the sputum samples from CF patients, and all the bacterium isolates were able to produce AI-2. Animal experiment data indicate that AI-2 produced by non-pseudomonad bacteria could enhance lung damage caused by *P. aeruginosa*, and AI-2 could regulate the expression of *P. aeruginosa* virulence factor genes. Conclusions: These results highlight the contribution of microbial interactions to the pathogenicity of *P. aeruginosa* via gene modulation and the potential of targeting such interactions to develop new antimicrobial agents.

ACCESSION NUMBER: 2004:24118 BIOSIS
DOCUMENT NUMBER: PREV200400025412
TITLE: AI-2 mediated signaling in the microbial community in the lungs of cystic fibrosis patients.
AUTHOR(S): Duan, K. [Reprint Author]; Duplisea, R. [Reprint Author]; Dammel, C.; Rabin, H. [Reprint Author]; Stein, J. [Reprint Author]; Surette, M. [Reprint Author]
CORPORATE SOURCE: University of Calgary, Calgary, AB, Canada
SOURCE: Abstracts of the Interscience Conference on Antimicrobial Agents and Chemotherapy, (2003) Vol. 43, pp. 66. print. Meeting Info.: 43rd Annual Interscience Conference on Antimicrobial Agents and Chemotherapy. Chicago, IL, USA. September 14-17, 2003. American Society for Microbiology.
DOCUMENT TYPE: Conference; (Meeting)
Conference; Abstract; (Meeting Abstract)
LANGUAGE: English
ENTRY DATE: Entered STN: 31 Dec 2003
Last Updated on STN: 31 Dec 2003

L3 ANSWER 7 OF 9 BIOSIS COPYRIGHT (c) 2008 The Thomson Corporation on STN
TI Inhibition of quorum sensing in *Clostridium perfringens* as a means toward food safety.
AB Cell density-dependent signaling through the use of autoinducers, classified as quorum sensing, may play a role in the survival and virulence of *Clostridium perfringens* in foods. The natural 2-(5H)-furanone, ascorbic acid (vitamin C), was chosen for evaluation as a quorum sensing analogue due to its structural similarity to autoinducer-2 (AI-2), a universal signal for inter-species communication. Ascorbic acid has been reported to have antimicrobial properties in meat, and it can be added to meat at concentrations up to 0.75 oz/100 lbs (30mM). Ascorbic acid inhibition of *C. perfringens* AI-2 production, growth, sporulation, and enterotoxin (CPE) production was measured following addition to cooked, 93% lean, supermarket ground beef using a *Vibrio harveyi* luminescence assay. Measured AI-2 production from *C. perfringens* in ground beef filtrates decreased from 14.6 million relative light units (RLU) at 0 mM ascorbic acid to 8.3 million RLU at 10 mM ascorbic acid to 0.1 million RLU at 30 mM ascorbic acid. To verify that this was not a result of assay inhibition due to lowering of the pH by ascorbic acid, sodium ascorbate, a non-acidic salt of ascorbic acid,

was tested resulting in similar reductions in RLUs despite the absence of pH variations. Total spore production in sporulation medium ranged from 6.83 log₁₀ spores/ml (0 mM ascorbic acid) to 1.37 log₁₀ spores/ml (10 mM ascorbic acid). Western immunoblot analyses of SDS-PAGE gels containing cell lysates from *C. perfringens* indicated highest CPE levels after 24 h at 37°C and decreased turn-over of CPE over time in the presence of 10 or 30 mM ascorbic acid. This study demonstrates the potential application of ascorbic acid as a quorum sensing inhibitor for controlling pathogen levels in foods.

ACCESSION NUMBER: 2003:532236 BIOSIS
DOCUMENT NUMBER: PREV200300534260
TITLE: Inhibition of quorum sensing in
Clostridium perfringens as a means toward food safety.
AUTHOR(S): Novak, J. S. [Reprint Author]
CORPORATE SOURCE: USDA, Wyndmoor, PA, USA
SOURCE: Abstracts of the General Meeting of the American Society
for Microbiology, (2003) Vol. 103, pp. P-084.
<http://www.asmta.org/mtgsrc/generalmeeting.htm>. cd-rom.
Meeting Info.: 103rd American Society for Microbiology
General Meeting. Washington, DC, USA. May 18-22, 2003.
American Society for Microbiology.
ISSN: 1060-2011 (ISSN print).
DOCUMENT TYPE: Conference; (Meeting)
Conference; Abstract; (Meeting Abstract)
LANGUAGE: English
ENTRY DATE: Entered STN: 12 Nov 2003
Last Updated on STN: 12 Nov 2003

L3 ANSWER 8 OF 9 BIOSIS COPYRIGHT (c) 2008 The Thomson Corporation on STN
TI Autoinducer 2 activity in *Escherichia coli* culture supernatants can be
actively reduced despite maintenance of an active synthase, LuxS.
AB Production of the signalling molecule (autoinducer-2) synthesized by LuxS
has been proposed to be pivotal to a universal mechanism of inter
-species bacterial cell-cell communication (quorum
sensing); however recently the function of LuxS has been noted to
be integral to central metabolism since it contributes to the activated
methyl cycle. This paper shows that when *Helicobacter pylori* LuxS is
overproduced in *Escherichia coli*, it forms cross-linkable multimers.
These multimers persist at comparable levels after 24 h of growth if
glucose is omitted from the growth medium; however, the levels of
extracellular autoinducer-2 decline (Glucose Retention of AI-
2 Levels: GRAIL). Glycerol, maltose, galactose, ribose and
L-arabinose could substitute for glucose, but lactose, D-arabinose,
acetate, citrate and pyruvate could not. Mutations in (i) metabolic
pathways (glycolytic enzymes *eno*, *pgk*, *pgm*; galactose epimerase; the
Pta-AckA pathway), (ii) sugar transport (*pts* components, *rbs* operon, *mgl*,
trg), and (iii) regulators involved in conventional catabolic repression
(*crp*, *cya*), cAMP-independent catabolite repression (*creC*, *fruR*, *rpoS*), the
stringent response (*relA*, *spoT*) and the global carbon storage regulator
(*csrA*) did not prevent GRAIL. Although the basis of GRAIL remains
uncertain, it is clear that the mechanism is distinct from conventional
catabolite repression. Moreover, GRAIL is not due to inactivation of the
enzymic activity of LuxS, since in *E. coli*, LuxS contained within
stationary-phase cells grown in the absence of glucose maintains its
activity in vitro.

ACCESSION NUMBER: 2003:214410 BIOSIS
DOCUMENT NUMBER: PREV200300214410
TITLE: Autoinducer 2 activity in *Escherichia coli* culture
supernatants can be actively reduced despite maintenance of
an active synthase, LuxS.
AUTHOR(S): Hardie, Kim R. [Reprint Author]; Cooksley, Clare; Green,
Andrew D.; Winzer, Klaus
CORPORATE SOURCE: Institute of Infections and Immunity, Queen's Medical
Centre, C-Floor, West Block, Nottingham, NG7 2UH, UK

kim.hardie@nottingham.ac.uk
SOURCE: Microbiology (Reading), (March 2003) Vol. 149, No. 3, pp.
715-728. print.
ISSN: 1350-0872 (ISSN print).
DOCUMENT TYPE: Article
LANGUAGE: English
ENTRY DATE: Entered STN: 30 Apr 2003
Last Updated on STN: 30 Apr 2003

L3 ANSWER 9 OF 9 BIOSIS COPYRIGHT (c) 2008 The Thomson Corporation on STN
TI Structural identification of a bacterial quorum-sensing
signal containing boron.

AB Cell-cell communication in bacteria is accomplished through the exchange
of extracellular signalling molecules called autoinducers. This process,
termed quorum sensing, allows bacterial populations to
coordinate gene expression. Community cooperation probably enhances the
effectiveness of processes such as bioluminescence, virulence factor
expression, antibiotic production and biofilm development. Unlike other
autoinducers, which are specific to a particular species of bacteria, a
recently discovered autoinducer (AI-2) is produced by
a large number of bacterial species. AI-2 has been
proposed to serve as a 'universal' signal for inter-
species communication. The chemical identity of AI-
2 has, however, proved elusive. Here we present the crystal
structure of an AI-2 sensor protein, LuxP, in a
complex with autoinducer. The bound ligand is a furanosyl borate diester
that bears no resemblance to previously characterized autoinducers. Our
findings suggest that addition of naturally occurring borate to an
AI-2 precursor generates active AI-2

. Furthermore, they indicate a potential biological role for boron, an
element required by a number of organisms but for unknown reasons.

ACCESSION NUMBER: 2002:164062 BIOSIS
DOCUMENT NUMBER: PREV200200164062
TITLE: Structural identification of a bacterial quorum-
sensing signal containing boron.
AUTHOR(S): Chen, Xin; Schauder, Stephan; Potier, Noelle; Van
Dorsselaer, Alain; Pelczer, Istvan; Bassler, Bonnie L.;
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=> s l1 and (DHCP)
L4 0 L1 AND (DHCP)

=> s (DHCP)
L5 53 (DHCP)

=> s l5 and l2 .
L6 0 L5 AND L2

=> d his

(FILE 'HOME' ENTERED AT 10:19:49 ON 07 JAN 2008)

FILE 'MEDLINE, BIOSIS' ENTERED AT 10:21:53 ON 07 JAN 2008
L1 17 S (QUORUM SENSING) AND (INTER SPECIES)

L2 2 S L1 AND (INDUCER)
L3 9 S L1 AND (AI-2)
L4 0 S L1 AND (DHCP)
L5 53 S (DHCP)
L6 0 S L5 AND L2

=> s l1 and l5

L7 0 L1 AND L5

=> s l5 and (quorum sensing)

L8 0 L5 AND (QUORUM SENSING)

=> s l5 and (AI-2)

L9 0 L5 AND (AI-2)

=> s l5 and (auto inducer)

L10 0 L5 AND (AUTO INDUCER)

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E6	9	PHADUNGCHAROEN T/AU
E7	2	PHADUNGCHAROEN THATREE/AU
E8	1	PHADUNGCHERP A/AU
E9	3	PHADUNGCHERWIT Y/AU
E10	1	PHADUNGKIAT SAMPANT/AU
E11	1	PHADUNGKIATWATTANA PODJANEE/AU
E12	2	PHADUNGKIJ S/AU